

# PATENT LITERATURE FOREIGN BIBLIOGRAPHIC DATABASES:

S1        109162        800694    S REMOTE()CONTROL? OR JOYSTICK?  
OR JOY()STICK? OR MANIPULAT?()CONTROL?()DEVIC? OR  
GAME()POD? ? OR GAMEPOD?

S2        476886        2750892    S WIRELESS()CONTROL? OR  
CONTROL?() (DEVICE? OR APPARATUS? OR APPLIANCE?) OR  
GAME() (PAD OR PADS OR PADDLE?)

S3        3619        21691    S PERIPHER?()INPUT?() (DEVICE? OR  
APPARATUS?) OR GAME()NAVIGAT? OR TRACKBALL? OR  
TRACK?()BALL? ? OR GAMEPAD?

S4        113894        733564    S INPUT()DEVICE? OR  
INPUT()OUTPUT() (DEVICE? OR APPARATUS?) OR IO()DEVICE? OR  
I()O()DEVICE?

S5        2005        18039    S GRAPHIC()USER()INTERFACE?

S6        847465        3843866    S GRIP? OR HANDGRIP? OR MANUAL?  
OR HAND()OPERAT? OR HANDHELD? OR HAND()HELD? OR PORTAB?

S7        2008821        6742413    S TRANSPORTAB? OR COMPACT OR  
SMALL OR POCKET? OR PALMHOLD? OR PALM()HELD OR MOBILE?

S8        415224        1983001    S MINI OR MINIATUR? OR MOVEAB?  
OR HAND() (CARRY? OR CARRIE?) OR WEARAB? OR HANDCARRY? OR  
CORDLESS? OR WIRELESS? OR (CORD OR WIRE)()LESS

S9        105842        256675    S PALMTOP? OR PALM? OR PALM()TOP  
OR PDA

S10       109677        1641285    S S1:S5 AND S6:S9

S11       1340        16104    S STEER?()WHEEL? OR STEERWHEEL?  
OR NAVIGAT?()WHEEL? OR STEERINGWHEEL? OR STEER?() (DEVICE?  
OR MECHANISM? OR APPARATUS? OR MEMBER?)

S12       7100        59789    S TILT? OR NUTAT? OR PIVOT? OR  
SWIVEL? OR OSCILLAT?

S13       212        1509    S GYROSCOP? OR GYRO() (SCOPE? OR  
SCOPIC?) OR TILT() (METER? ? OR METRE? ?) OR GIMBAL? OR  
GYMBAL?

S14       110        992    S POLYAXIAL? OR MULTIAXIAL? OR  
(POLY OR MULTI)() (AXIS? OR AXES? OR AXIAL?)

S15       440        2545    S (ANGUL? OR ANGLE?) (3N) (MOTION?  
OR MOVING? OR MOVE? ? OR MOVEMENT?)

S16       1469        7640    S (ADJUST? OR MODIF? OR ADAPT?  
OR RECONFIG? OR ALTER?) (3N) (MOTION? OR MOVING? OR MOVE? ?  
OR MOVEMENT?)

S17       670        3304    S (CHANGE? OR CHANGING? OR  
CHANGAB? OR CUSTOM? OR PERSONALI? OR  
INDIVIDUALI?) (3N) (MOTION? OR MOVING? OR MOVE? ? OR  
MOVEMENT?)

S18	40	412	S PITCH?(5N)ROLL?(5N) (YAW OR YAWS OR YAWED OR YAWING)
S19	0	0	S SOMATOGYR? OR SOMATOGRV? OR SOMAT?() (GYRO? OR GYRA? OR GRAVI?)
S20	6820	42574	S FORWARD? OR REVERS? OR AXIAL?()DIRECTION? OR (LEFT(2N)RIGHT)()DIRECTION? OR TURN?(2N) (LEFT OR RIGHT OR DIRECTION? OR CORNER? OR RIGHT()ANGLE?)
S21	860	2823	S BACKWARD? OR STRAIGHT()AHEAD?
S22	434	3729	S LEFT()HAND? OR RIGHT()HAND?
S23	15	86	S (NO()HAND? OR REGARDLESS? OR ABSENT? OR CUSTOM? OR RECONFIG? OR CONFIG? OR ADAPT?B? OR CONFORM? OR MODIF? OR ALTER? OR CHANGE? OR CHANGING) (2N) (HAND? OR DEXTER?) (2N) (PREFER? OR FAVOR? OR FAVOUR?)
S24	0	0	S AMBIDEXTER? OR AMBI()DEXTER?
S25	410	2804	S (CONSOLE OR SERVER) (2N) (GAME? OR GAMING) OR GAMESERVER?
S26	1895	16966	S (VIDEO OR INTERNET OR ONLINE OR ELECTRONIC OR ETHERNET OR COMPUTER? OR SOFTWARE?) (2N) (GAME? OR GAMING OR TOURNAMENT? OR COMPETITION?) OR VIDEOGAM? OR COMPUTERGAM?
S27	27	83	S (EXTRANET? OR LAN OR LANS OR WAN OR WANS OR VPN OR WEB OR CYBER) (2N) (GAME? OR GAMING OR TOURNAMENT? OR COMPETITION?) OR ONLINEGAM?
S28	0	0	S ELECTRONICGAME? OR CYBERGAME? OR ONLINEGAME? OR MMOG?(5N) (MULTIMEDIA? OR MULTI()MEDIA OR ONLINE OR GAME? OR GAMING)
S29	98	419	S ATARI OR NINTENDO OR SEGA OR XBOX OR PLAYSTATION? OR PS2 OR PLAY()STATION? OR SONYP2 OR MSXBOX?
S30	45	155	S NINTENDO OR DREAMCAST OR CARBOT OR VISTEON OR NAVMATE OR GAMECUBE OR GAMEGO OR NAMCO OR GAMEBOY? OR GAME() (BOY OR BOYS)
S31	713	6480	S VIDEOGAME? OR TOY OR TOYS OR TOYCAR? OR TOYTRUCK? OR CYBERGAME?
S32	13015	47518	S IC=(A63H? OR H01H? OR H04L? OR G08C? OR G03B? OR H01H?)
S33	18976	36745	S MC=(P36? OR W04? OR W05? OR P82? OR S06?)
S34	1340	37109	S S10 AND S11
S35	0	0	S S34 AND S12:S19 AND S20:S21 AND S22:S24 AND S25:S33
S36	226	10052	S S34 AND S12:S19
S37	208	8589	S S34 AND S20:S21
S38	24	1337	S S34 AND S22:S24
S39	377	19011	S S36:S38

S40 66 4442 S S39 AND S25:S33  
 S41 249 16492 S S39 AND AY=1970:2002  
 S42 276 12660 S S39 NOT AY=2003:2008  
 S43 294 25484 S S41:S42  
 S44 19 4071 S S43 AND S38  
 S45 53 11854 S S43 AND S36 AND S37  
 S46 86 14612 S S43 AND S36:S37 AND  
 S1:S5 (10N) S6:S9  
 S47 176 29724 S S38 OR S40 OR S44:S46  
 S48 176 25546 IDPAT (sorted in duplicate/non-  
 duplicate order)  
 S49 174 25402 IDPAT (primary/non-duplicate  
 records only)  
 ; show files

[File 347] **JAPIO** Dec 1976-2007/Dec(Updated 080328)

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[File 350] **Derwent WPIX** 1963-2008/UD=200843

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49/5,K/46 (Item 46 from file: 350) [Links](#)

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Derwent WPIX

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0012787123 & & *Drawing available*

WPI Acc no: 2002-642386/200269

XRPX Acc No: N2002-507744

**Remote control device for engine of small vessels, includes pair of potentiometers to perform clutch and throttle control of port and starboard engines, based on operation of rockable control levers in housing**

Patent Assignee: NHK MORSE CO LTD (NHKM-N); NIHATSU MOSU KK (NIHA-N)

Inventor: HOSHINA Y

Patent Family ( 3 patents, 2 & countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20020090866	A1	20020711	US 20015546	A	20011029	200269	B
JP 2002137795	A	20020514	JP 2000333774	A	20001031	200269	E
US 6675733	B2	20040113	US 20015546	A	20011029	200405	E

Priority Applications (no., kind, date): JP 2000333774 A 20001031; US 20015546 A

A pair of rockable control levers (23,24) located individually on opposite side portions of device housing (22), control port and starboard engines. A pair of potentiometers in the device housing (22), performs clutch and throttle controls of the port and starboard engines, based on operation of control levers, respectively. A pair of locking mechanisms (40,41) hold the respective control levers (23,24) in neutral position.

DESCRIPTION - A displacement sensor for engine control is set in the housing and adapted to deliver a **forward**-control signal for an engine when the control lever is rocked to the front side and to deliver a **reverse**-control signal for the engine when the control lever is rocked to the rear side.

USE - For **remote control** of propellant engine, **steering mechanism** of **small** vessels, also for dial-type knobs for starboard and port engines, dial-type steering knob, etc.

ADVANTAGE - The **remote control device** can be operated with ease, since the direction of operation of the control levers and the moving direction of the vessel are associated with each other, hence the vessel can be steered safely and easily, without requiring any veteran skill.

DESCRIPTION OF DRAWINGS - The figure shows a plan view of **remote control device** for **small** vessel.

22 Housing

23,24 Control levers

40,41 Locking mechanisms

**Remote control device for engine of small vessels, includes pair of potentiometers to perform clutch and throttle control of port and starboard engines, based on operation of rockable control levers in housing** Original Titles: REMOTE CONTROL DEVICE FOR SMALL SHIP... ..Remote control device for small vessel... ..Remote control device

for **small** vessel Alerting Abstract DESCRIPTION - A displacement sensor for engine control is set in the housing and adapted to deliver a **forward**-control signal for an engine when the control lever is rocked to the front side and to deliver a **reverse**-control signal for the engine when the control lever is rocked to the rear side... ..USE - For **remote control** of propellant engine, **steering mechanism** of **small** vessels, also for dial-type knobs for starboard and port engines, dial-type steering knob, etc... ..ADVANTAGE - The **remote control device** can be operated with ease, since the direction of operation of the control levers and the moving direction of the vessel are associated with each... ..DESCRIPTION OF DRAWINGS - The figure shows a plan view of **remote control device** for **small** vessel...

Original Publication Data by Authority Argentina Publication No. Original Abstracts: A **remote control device** comprises a **portable housing**, control levers, **steering** knob, locking mechanisms, selector switch, indicators, emergency stop switch, etc. The locking mechanisms can hold the control levers in a neutral position. The housing contains therein potentiometers adapted to deliver electric signal for engine control when the control levers are moved back and forth **and** a potentiometer **adapted** to deliver electric signal for driving a **steering mechanism** when the **steering knob** is moved from side to side... .. A **remote control device** comprises a **portable** housing, control levers, **steering knob**, **locking** mechanisms, selector **switch**, indicators, emergency stop switch, etc. The locking mechanisms can hold the control levers in a neutral position. The housing contains therein potentiometers adapted to deliver electric signal for engine control when **the** control levers are **moved** back and forth and a potentiometer **adapted** to **deliver** electric signal for driving a **steering mechanism** when the steering knob is moved from **side to** side. **Claims:** What is claimed is: 1. A **remote control device** for a **small** vessel, comprising: a **portable housing**

**capable** of being **held** by a steersman;a control **lever** attached to the housing and rockable back and forth;a displacement sensor for engine control set in the housing and adapted to deliver a **forward**-control signal for an engine when the control lever is rocked to the front **side** and to deliver a **reverse**-control signal for the engine when the control lever is rocked to the rear **side**; and a locking mechanism capable of holding the control lever in a neutral position... .. What is claimed is:1. A **remote control device** for a **small** vessel, comprising;a **portable** housing capable of being held by a steersman;a at least one control lever attached to the housing **and rockable back** and forth;a displacement sensor for engine control **set** in the housing and adapted to deliver a **forward**-control signal for an engine when the control lever is rocked **forward** and to deliver a **reverse**-control signal for the engine when the control lever is rocked **backward**;a locking mechanism capable **of** holding the control lever in a neutral position;an emergency stop **switch** provided on the **portable housing** for stopping operation of the engine in case of emergency.

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49/5,K/52 (Item 52 from file: 350) [Links](#)

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Derwent WPIX

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0012361334 & & *Drawing available*

WPI Acc no: 2002-303967/200234

Related WPI Acc No: 2003-038474

XRPX Acc No: N2002-237863

**Handheld driving simulation game apparatus for simulating movement or driving activities has control device shifting image laterally**

Patent Assignee: MATTEL INC (MATV)

Inventor: REHKEMPER S

Patent Family ( 2 patents, 91 & countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2002011838	A1	20020214	WO 2001US21950	A	20010712	200234	B
AU 200176884	A	20020218	AU 200176884	A	20010712	200244	E

Priority Applications (no., kind, date): [US 2000631819 A](#) [20000803](#)

A control device may create an image on a LCD display (27), which is shifted laterally in response to the number of sensors. The housing (11) may be held by a user grasping handles (12,13) and tilting the housing to slide a toy vehicle (50) laterally upon roller pairs (40-43). Sensors sense the lateral position of the toy vehicle and the control device shifts the image laterally.

USE - In handheld game apparatus simulating movement or driving activities.

ADVANTAGE - Provides an improved handheld driving simulation game apparatus, which combines the action of a scrolled display with authentic toy vehicle movement.

DESCRIPTION OF DRAWINGS - The drawing shows a perspective view of a handheld driving simulation game constructed in accordance with the present invention.

11 housing

12,13 handles  
40-43 roller pairs  
50 toy vehicle

**Abstracts:**A game apparatus (10) includes a housing (11) supporting a pair of steering wheel segment handles (12, 13) on each side thereof. The **steering wheel** segment handles (12, 13) support an accelerator button (25) and a brake button (26). The game apparatus (10) includes a housing (11) having a vehicle bed (34) upon which a quartet of rollers (40)(41)(42)(43) are positioned. The housing (11) further supports a liquid crystal display (27) which provides a **forward** view of a **roadway** (22) depicting the view from a **toy** vehicle supported upon **the** rollers. An internal motor drive system (not shown) rotates the rollers (40)(41)(42)(43) to spin the **toy** vehicle wheels (51)(**52**)(53)(54) in accordance with a speed selected by the accelerator button (25) and the brake button (26). A plurality of optical sensors (44)(45)(46) are positioned upon the vehicle bed (34) to sense the lateral position (65) of the **toy** vehicle as the **user** executes turning movement of the **steering wheel** handles (12)(13) and the **toy** vehicle slides laterally.

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49/5,K/64 (Item 64 from file: 350) [Links](#)  
Fulltext available through: [Order File History](#)  
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0010542622 & & *Drawing available*  
WPI Acc no: 2001-145632/200115  
XRPX Acc No: N2001-106423

**Control device for playing computer games, comprises fixed bottom part and movable top part with hand operated controls and steering**

Patent Assignee: KARLSSON L (KARL-I)  
Inventor: KARLSSON L

Patent Family ( 4 patents, 92 & countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
SE 199903820	A	20001030	SE 19993820	A	19991022	200115	B
SE 513719	C2	20001030	SE 19993820	A	19991022	200115	E
WO 2001029646	A1	20010426	WO 2000SE2046	A	20001020	200125	E
AU 200111849	A	20010430	AU 200111849	A	20001020	200148	E

Priority Applications (no., kind, date): SE 19993820 A 19991022

The device comprises a top part (1) movably supported by a bottom part (2). The top part comprises a bracket (4) for holding a conventional control and guide section (5) with a gyro, a steering device (18) for moving the top part relative to the bottom part, and hand-operated actuators (21, 22) for operating control buttons (23), these actuators being accessible whilst holding the steering device.

USE - Control device for playing computer games.

ADVANTAGE - The steering and controls give the computer game more realism.

DESCRIPTION OF DRAWINGS - Figure 1 shows a perspective view of a control device for playing a motorbike racing game.

- 1 Top part
- 2 Bottom part
- 3 Helical spring
- 4 Bracket
- 5 Conventional control and guide section with gyro
- 7 Short side of support
- 10 Expander plug
- 12 Adjustment screw
- 15 Base
- 16 Shaft
- 17 Locking screw
- 18 Handlebars
- 19 Holder
- 20 Steering handle
- 21 Accelerator handle
- 22 Brake handle
- 23 Buttons
- 24, 25 Double-arm links
- 26, 27 Slide cables
- 28 Downwards-bent section of front end of support
- 29 Rubber pad
- 30 Spring

**Abstracts:** of, the user can use to manoeuvre the first section (1) relative to the second section (2), as well as hand-control devices (21, 22) **arranged on the steering device** and positioned **so that** they are easily accessible for the user when grasping the **steering device** and arranged **to affect** by movement the hand-control device (23) with **which the** supported control and guidance device is equipped

A holding device 19 that allows a detachable attachment of the steering device 18 to the first part 1 is arranged on the upper side of the attachment of the support 4 formed from metal plate to the spring device. In the embodiment of the invention described here, the holding device 19 includes clamps that act via a screw device. As the said steering device 18 can be easily exchanged, the fictitious control and hand manoeuvre device according to the invention acquires the advantage that it can easily be equipped with different types of steering device 18 where these have simply been chosen to or given a design to meet the requirements of the game or game scenario in question. In other words, it can be considered to provide the device according to the invention with other steering devices 18 than that shown here. It could, for example, be provided with steering wheels, helms, etc.

As is evident from Fig.1, it is the steering device 18 in the form of a handle bar with which, merely as an example, the embodiment of the invention described here is equipped, together with hand grips 20 at its outer ends that the user can grasp hold of for manoeuvring the first part relative to the second part. Hand-control devices in the form of known controls that more specifically include an acceleration hand-control grip 21 and a brake hand-control grip 22 respectively are arranged in the area of the said hand-grips 20.

Hand-control devices 21,22 are appropriately positioned in such a manner that they are easily accessible for manoeuvring, even when grasping the hand-grip 20.

The said hand-control devices 21,22 or, more specifically, the acceleration hand-control grip and the brake hand-control grip respectively, are arranged to affect by movement the hand-control device that, in the form of the keypads or push-buttons generally designated by 23, is located on the outside of the supported control and guidance device 5 equipped with a gyro. For this purpose, a first and a second double-armed link 24 respective 25 are mounted to pivot on either side of the support 6 formed from metal plate where one of the ends of the double-armed link 24 is joined with the acceleration hand-control grip 21 via a first sliding cable 26 so that it can transfer movement, and where one of the ends of the second double-armed link 25 is joined with the brake hand-control grip 22 via a second sliding cable 27 so that it can transfer movement.

#### Claims

1. Fictitious control and hand manoeuvre device intended to be used with the type of hand-held control and guidance devices (5) equipped with a gyro that are used to control computer games or similar characterised in that it includes a first section (1) that is supported in a multiple-axial moveable manner by a second section (2) whereby the first section includes a holding device (4) arranged to support and hold in position the control and guidance device (5) equipped with a gyro, a steering device (18) that, by grasping hold of, the user can use to manoeuvre the first section (1) relative to the second section (2), as well as hand-control devices (21,22) arranged on the steering device and positioned so that they are easily accessible for the user when grasping the steering device and that are arranged to affect by movement the hand-control device (23) with which the supported control and guidance device is equipped.

2. Fictitious control and hand manoeuvre device according to claim 1 characterised in that the first section (1), when not affected, is arranged to return to a specific starting position relative to the second part (2).

3. Fictitious control and hand manoeuvre device according to claim 2 characterised in that the holding device (4) includes an adjusting device (11) for adjusting the control and guidance device (5) supported by the first section (1) to a starting position that essentially coincides with the horizontal plane.

4. Fictitious control and hand manoeuvre device according to claim 3 characterised in that the holding device (4) includes a support (6) for supporting the control and guidance device (5) plus means of attachment for firmly attaching the control and guidance device at the support, whereby the adjusting device (11) acts between the support and the control and guidance device.

5. Fictitious control and hand manoeuvre device according to claim 1 characterised in that the first section (1) includes a holding device (19) for the detachable attachment of the steering device (18) to the said first part.



6. Fictitious control and hand manoeuvre device according to any of the previous claims characterised in that the means of obtaining the freedom of movement between the first section (1) and the second section (2) includes a spring device (3) arranged between the two said parts.

7. Fictitious control and hand manoeuvre device according to any of the previous claims characterised in that the means of transferring movement between the hand manoeuvre device (21,22) of the first section (1) and the control device (23) included in the control and guidance device (5) includes sliding cables (26,27) that are arranged to affect by movement the control and guidance device included in the control device via arms (24,25) mounted to pivot on the first part (1) and return springs (30) arranged to interact with these.

8. Fictitious control and hand manoeuvre device according to claim 1 characterised in that the second part (2) is adjustable in height and, when in position for use, is provided with a support (15) at the base such as a foot or similar intended to be placed on a surface beneath it.

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49/5,K/66 (Item 66 from file: 350) [Links](#)

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0010273604 & & *Drawing available*

WPI Acc no: 2000-586450/200055

XRPX Acc No: N2000-433958

**Steering system of remote controlled toy vehicle, effects discrete changes in steering position of vehicle based on production of steering movement of vehicle proportional to manual movement of steering mechanism**

Patent Assignee: NAMMOTO M (NAMM-I)

Inventor: NAMMOTO M

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 6113459	A	20000905	US 1998216785	A	19981221	200055	B

An electronic control circuit responds to steering regulator assembly to generate output designed to produce steering movement of vehicle proportional to **manual** movement of **steering mechanism**. A steering actuator mounted on vehicle effects discrete changes in steering position of vehicle, based on output of control circuit.

DESCRIPTION - The steering regulator assembly regulates the direction of travel of the vehicle, based on **change** in direction of **movement** of **steering mechanism** determined by a direction indicator assembly.

USE - For steering of **remote controlled toy vehicle** used by children and as well as by those involved in hobby of model building and model competition.

ADVANTAGE - Regulates, controls and operates vehicle designed to travel over land or

ground surface are alternately to travel over water or in air, hence provides proportional and discrete increments of moment of steering effectuator in realistic fashion.

DESCRIPTION OF DRAWINGS - The figure shows perspective view of components of steering assembly.

**Steering system of remote controlled toy vehicle, effects discrete changes in steering position of vehicle based on production of steering movement of vehicle proportional to manual movement of steering mechanism** Original Titles: Remote toy steering mechanism. Alerting Abstract ...NOVELTY - An electronic control circuit responds to steering regulator assembly to generate output designed to produce steering movement of vehicle proportional to **manual** movement of **steering mechanism**. A steering effectuator mounted on vehicle effects discrete changes in steering position of vehicle, based on output of control circuit. DESCRIPTION - The steering regulator assembly regulates the direction of travel of the vehicle, based on **change** in direction of **movement** of **steering mechanism** determined by a direction indicator assembly... USE - For steering of **remote controlled toy vehicle** used by children and as well as by those involved in hobby of model building and model competition... Abstracts: A steering assembly for vehicles, particularly **toy vehicles** including a **remote control** assembly having a **steering mechanism** mounted thereon in the form of a **steering wheel** or yoke being **manually** rotatable wherein movement of the **steering wheel** causes a proportionate movement in a steering effectuator mounted on the vehicle thus replicating or closely representing the steering operation or "feel" of a conventional vehicle. A plurality of cam lobes are mounted on and move with the **steering mechanism** and serve to activate a cam following switch which is connected to electronic control circuitry which is designed to effectively control the steering effectuator of... to accomplish a discrete change in steering position with each generated pulse in order to closely represent the steering operation of a conventional vehicle. The **remote control** assembly may be connected to the vehicle by electric wires wherein the generated pulses may be of sufficient power to operate a steering motor associated with the steering effectuator of the vehicle. The **remote control** may be alternately connected by radio signals such that the generated pulses would signal a companion electronic circuit in the vehicle, which in turn sends... Claims: A steering system for a remotely control vehicle comprising: a) a **remote control** assembly structured to regulate movement of the vehicle and including, a **steering mechanism** structured to be **manually moveable** in accordance with an **intended direction** of travel of the vehicle, b) a direction indicator assembly mounted at least partially on said **steering mechanism** and structured to determine a change in **direction** of the **movement** of said **steering mechanism**, c) a steering regulator assembly connected to said **steering mechanism** and at least partially **moveable** therewith, d) said **steering regulator** assembly structured to regulate a direction of travel of the vehicle, e) electronic control circuitry responsive to said steering regulator assembly to generate an output designed to produce steering movement of the vehicle proportionate to the **manual** movement of the **steering mechanism**, and f) a steering effectuator mounted on the **vehicle** and responsive to said **electronic** control circuitry and structured to effect discrete changes in the steering position of the vehicle based on the output of said electronic control circuitry.

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49/5,K/70 (Item 70 from file: 350) [Links](#)

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XRPX Acc No: N2000-152790

**Force feedback interface device for enhancing computer generated environment interactions**

Patent Assignee: HASSER C J (HASS-I); IMMERSION CORP (IMME-N); ROSENBERG L B (ROSE-I); SHAHOIAN E J (SHAH-I)

Inventor: HASSER C J; MARTIN K M; RIEGEL J R; ROSENBERG L B; SHAHOIAN E J

Patent Family ( 24 patents, 81 & countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1999066997	A1	19991229	WO 1999US14085	A	19990622	200018	B
DE 29922298	U1	20000302	DE 29922298	U	19991220	200018	E
AU 199947074	A	20000110	AU 199947074	A	19990622	200025	E
GB 2343499	A	20000510	WO 1999US14085	A	19990622	200026	E
			GB 20003875	A	20000218		
EP 1005690	A1	20000607	EP 1999930559	A	19990622	200032	E
			WO 1999US14085	A	19990622		
US 6088019	A	20000711	US 1998103281	A	19980623	200037	E
GB 2346952	A	20000823	GB 199929677	A	19991215	200041	E
DE 29923332	U1	20001207	DE 29923332	U	19990622	200065	E
			WO 1999US14085	A	19990622		
US 6184868	B1	20010206	US 1998156802	A	19980917	200109	E
US 20010000663	A1	20010503	US 1998156802	A	19980917	200126	E
			US 2000741310	A	20001219		
US 6243078	B1	20010605	US 1998103281	A	19980623	200133	E
			US 1998156802	A	19980917		
			US 1999253132	A	19990218		
DE 29923933	U1	20010705	DE 29923933	U	19990916	200145	E
			WO 1999US21316	A	19990916		
US 20010019324	A1	20010906	US 1998103281	A	19980623	200154	E
			US 1998156802	A	19980917		
			US 1999253132	A	19990218		
			US 2001853453	A	20010510		
US 6353427	B1	20020305	US 1998103281	A	19980623	200224	E
			US 2000563783	A	20000502		
GB 2343499	B	20020612	WO 1999US14085	A	19990622	200239	E
			GB 20003875	A	20000218		
US 20020097223	A1	20020725	US 1998103281	A	19980623	200254	E
			US 2000563783	A	20000502		
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US 6469692	B2	20021022	US 1998103281	A	19980623	200273	E
			US 1998156802	A	19980917		
			US 1999253132	A	19990218		
			US 2001853453	A	20010510		
GB 2346952	B	20030806	GB 199929677	A	19991215	200353	E
US 6697044	B2	20040224	US 1998156802	A	19980917	200415	E
			US 2000741310	A	20001219		

US 20050128186	A1	20050616	US 1998156802	A	19980917	200540	E
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			US 2004782939	A	20040223		
US 20060119589	A1	20060608	US 1998103281	A	19980623	200638	NCE
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			US 2000487737	A	20000119		
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			US 2006340997	A	20060127		
US 20060267944	A1	20061130	US 1998103281	A	19980623	200680	E
			US 1999253132	A	19990218		
			US 1999456887	A	19991207		
			US 2001798498	A	20010301		
			US 2006499425	A	20060804		
US 7265750	B2	20070904	US 1998103281	A	19980623	200759	E
			US 2000563783	A	20000502		
			US 200291750	A	20020305		
US 20070298877	A1	20071227	US 1998103281	A	19980623	200803	E
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			US 2007899369	A	20070904		

he force feedback interface includes a sensor which detects the movement of a user manipulatable object relative to a ground in at least one degree of freedom within a single plane e.g. a mouse, and an actuator which responds to the sensor signals to apply a linear force to the object perpendicular to the plane of object movement, along an axis extending through the object.

DESCRIPTION - INDEPENDENT CLAIMS are included for a force feedback mouse, a force feedback pointing device, and a method for providing force feedback in a mouse **input device**.

USE - For use with **input devices** e.g. mouse (claimed) or other pointing device (claimed), e.g. stylus, tablet, **trackball**, **steering wheel** or **joystick**, for enhancing user interactions in a computer generated environment e.g. experiencing a simulation or virtual reality, using a computer aided design (CAD), or operating a graphical user interface (GUI).

ADVANTAGE - Enhances the interactions and manipulations in computer generated environments such as displayed graphical environments at low cost using simpler components.

DESCRIPTION OF DRAWINGS - The drawing shows a block diagram of a system including a host computer and a force feedback interface device.

CLAIMS are included for a force feedback mouse, a force feedback pointing device, and a method for providing force feedback in a mouse **input device**. ... USE - For use with **input devices** e.g. mouse (claimed) or other pointing device (claimed), e.g. stylus, tablet, **trackball**, **steering wheel** or **joystick**, for enhancing user interactions in a computer generated environment e.g. experiencing a simulation or virtual reality, using a computer aided design (CAD), or operating **Abstracts:**Improvements in haptic feedback **control devices** include several embodiments. A haptic feedback **control device** includes a housing and a pair of **moveable** pincher members coupled to the housing. Each pincher member is contacted by a

finger of the user when the device is operated and **moveable** in a degree of freedom approximately within a single plane. An actuator outputs force feedback on the pincher members in the degrees of freedom, and a sensor detects a position of the pincher members in the degrees of freedom. The device housing includes a fixed portion and a **moveable** portion, where the user **grips** both fixed and **moveable** portions. A coupling, such as a flexure, allows the **moveable** portion to move relative to the fixed portion in a direction parallel to an outer surface of the **moveable** portion contacted by the user. An actuator outputs a force on the flexure to cause the **moveable** portion to move, such as an **oscillating** force to cause vibration. These improvements allow a user to feel force feedback and tactile feedback when operating the device. Applications include telemanipulator devices as well as interface devices and **game** controllers for **computers**. ... A haptic feedback **control device**, such as a **handheld remote control** or **handheld** game controller, for controlling a graphical object within a graphical display and for outputting forces to a user. A housing includes a button, wherein the... A haptic feedback planar touch control used to provide input to a computer. A touch **input device** includes a planar touch surface that inputs a position signal to a processor of the computer based on a location of user contact on the... environment based at least in part on the position signal, or perform a different function. At least one actuator is also coupled to the touch **input device** and outputs a force to provide a haptic sensation to the user contacting the touch surface. The touch **input device** can be a touchpad separate from the computer's display screen, or can be a touch screen. Output haptic sensations on the touch **input device** can include pulses, vibrations, and spatial textures. The touch **input device** can include multiple different regions to control different computer functions.

Haptic feedback **control devices** of the present invention include several embodiments. One embodiment includes a housing and a pair of **moveable** pincher members coupled to the housing. Each pincher member is contacted by a finger of the user when the device is operated and **moveable** in a degree of freedom approximately within a single plane. An actuator outputs force feedback on the pincher members and a sensor detects a position of the pincher members in the degrees of freedom. The device housing can include a fixed portion and a **moveable** portion, where the user contacts both fixed and **moveable** portions. A coupling, such as a flexure, allows the **moveable** portion to move relative to the fixed portion in a direction parallel to an outer surface of the **moveable** portion contacted by the user. An actuator outputs a force on the flexure to cause the **moveable** portion to move, such as an **oscillating** force to cause vibration. These improvements allow a user to feel force feedback and tactile feedback when operating the device. Applications include telemanipulator devices as well as interface devices and **game** controllers for **computers**. A haptic feedback **control device**, such as a **handheld remote control** or **handheld** game controller, for controlling a graphical object within a graphical display and for outputting forces to a user. A housing includes a button, wherein the.... S... **Claims:** 1. A haptic feedback **control device** for inputting control signals to a computer and for outputting forces to a user of the **control device**, the **control device** comprising: a **grip**; a pair of **moveable** pincher members coupled to said **grip** and each contacted by a finger of said user when said device is operated, each of said pincher members being **moveable** in a degree of freedom, both of said degrees of freedom approximately within a single plane, wherein when a first one of said pincher members... 1. A device, comprising: a housing having a fixed portion and a **moveable** portion, the **moveable** portion configured to move laterally with respect to the fixed portion; a coupling member coupled to the **moveable** portion and the fixed portion; and an actuator coupled to the coupling member, the actuator configured to output haptic feedback to the **moveable** portion of the housing via the coupling member... What is claimed is: 1. A **joystick** apparatus comprising: a base; a graspable handle coupled to the base and **moveable**

in a plurality of rotatable degrees of freedom with respect to the base; a sensor configured to sense movement of the handle relative to the ... housing is movably coupled to a base portion of said mouse by at least one hinge and wherein said user contacts said cover portion with a palm of a hand of said user, said cover portion including at least a portion of a top surface of said mouse housing; at least... ... A haptic **feedback control** device for inputting control signals to a computer and for outputting forces to a user of **the control** device, **the control** device comprising: a grip; a pair of moveable pincher members coupled to said grip and each contacted by a finger of said user when said device is operated, each of said pincher members **being** moveable in a degree of freedom, both of said degrees of freedom approximately within a single plane, wherein when a first one of said pincher... ... wherein said cover portion is movably coupled to said base portion by at least one hinge and wherein said user contacts said cover portion with a palm of a hand of said user, said cover portion including at least a portion of a top surface of said mouse housing; and outputting a l... What is claimed is: **1. A handheld** remote control for controlling a device having a graphical object within a graphical display and for outputting forces to a user **of the handheld** remote **control, the handheld** remote control comprising: a housing including at least one button, wherein said user engages said button with a finger of said user for the purpose... ... by said user, said sensor providing an output indicative of said user's engagement, said output being transmitted to said device; and control circuitry, local **to said handheld** remote control, controlling said actuator to generate said forces, said forces dependant on said function accessed by said user, thereby providing a tactile sensation to s.

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49/5,K/141 (Item 141 from file: 350) [Links](#)

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0004975502 & & *Drawing available*

WPI Acc no: 1989-370857/198950

**Computer vehicle simulator control device - includes handlebar, handwheel and aircraft joystick allowing alternate vehicle simulation**

Patent Assignee: CREATIVE DEVICES RE (CREA-N); HOLLOWAY W P (HOLL-I);

KONIX PROD LTD (KONI-N)

Inventor: HOLLOWAY W; HOLLOWAY W P

Patent Family ( 10 patents, 15 & countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1989011704	A	19891130	WO 1989GB589	A	19890530	198950	B
GB 2220252	A	19900104	GB 198812716	A	19880527	199001	E
AU 198936802	A	19891212				199010	E
EP 438411	A	19910731	EP 1989906187	A	19890530	199131	E
JP 3505381	W	19911121	JP 1989505667	A	19890530	199202	E
US 5125843	A	19920630	WO 1989GB589	A	19890530	199229	E
			US 1991646713	A	19910128		
CA 1311055	C	19921201	CA 600887	A	19890526	199302	E
EP 438411	B1	19940928	EP 1989906187	A	19890530	199437	E
			WO 1989GB589	A	19890530		

DE 68918596	E	19941103	DE 68918596	A	19890530	199443	E
			EP 1989906187	A	19890530		
			WO 1989GB589	A	19890530		
KR 199700844	B1	19970120	WO 1989GB589	A	19890530	199933	E
			KR 1990700173	A	19900125		

The **control device** comprises a column (10) rotatably mounted about a transverse axis (11) on spigots (12) operating a transducer (22). A hub member (14) is rotatably mounted at the upper end of the column (10) about an axis (15) operating a transducer (21). A simulated throttle (24) operates a transducer (25), mounted on a base (13).

Mounted onto the hub (14) are either simulated motorcycle handlebars, and aircraft **joystick** or a car **steering wheel**. The column (10) may be locked about the transverse axis (11) by a clamp (23). Other controls may be provided by foot operated pads.

USE - **Computer games**, tests of skill or training purposes.

**Abstract** ...The **control device** comprises a column (10) rotatably mounted about a transverse axis (11) on spigots (12) operating a transducer (22). A hub member (14) is rotatably mounted... ...Mounted onto the hub (14) are either simulated motorcycle handlebars, and aircraft **joystick** or a car **steering wheel**. The column (10) may be locked about the transverse axis (11) by a clamp (23). Other controls may be provided by foot operated pads...

...USE - **Computer games**, tests of skill or training purposes. **Equivalent Alerting Abstract**

...The **control device** provides control signals to a computer simulating a vehicle being drive. The control evice includes a handle (10) which is **manually** rotatable about a first axis. The handle comprises a handlebar extending outwards from the first axis on either side. The handlebar includes an inner portion (17) and hand **grips** (18). In a first disposition, the hand **grip** is aligned with the inner portion to simulate handlebars of a motor cycle... ...In a second disposition, the hand **grips** are ina position simulating a **joystick** of an aircraft. The inner portions represent spokes and the hand **grips** are generally parallel to one another. The **control device** also includes a hand wheel to simulate a **steering wheel** of a car or the like the hand wheel being adapted to attach onto the hand **grips** when the latter are in the aircraft **joystick** simulating position... **Abstracts:** The **control device**, which provides control signals to a computer simulating a vehicle being driven, includes a handle (10) which is **manually** rotatable about a first axis (11), the handle comprising a handlebar (16) extending outwards from the first axis on either side thereof. The handlebar includes an inner portion (17) and hand **grips** (18) on the ends thereof inner portion, the hand **grips** being slightly curved and obliquely **pivoted** to the respective inner portion of the handlebar in such a way that in a first disposition the hand **grip** is substantially aligned with the inner portion to simulate handlebars of a motor cycle, and in a second disposition the hand **grips** are in position simulating a **joystick** of an aircraft, wherein the inner portions represent spokes and the hand **grips** are generally parallel to one another. Conveniently, the **control device** also includes a hand wheel to simulate a **steering wheel** of a car or the like,the hand wheel being adapted to attach onto the hand **grips** when the latter are in the aircraft **joystick** simulating position... ... The **control device**, which provides control signals to a computer simulating a vehicle being driven, includes a handle 10 which is **manually** rotatable about a first axis 11, the handle comprising a handlebar 16 extending outwards from the first axis on either side thereof. The handlebar includes an inner portion 17 and hand **grips** 18 on the ends thereof inner portion, the hand **grips** being slightly curved and obliquely **pivoted** to the respective inner portion of the handlebar in such a way that in a first disposition the hand **grip** is substantially aligned with the inner portion to simulate handlebars of a motor cycle, and in a second disposition the

hand **grips** are in a position simulating a **joystick** of an aircraft, wherein the inner portions represent spokes and the hand **grips** are generally parallel to one another. Conveniently, the **control device** also includes a hand wheel to simulate a **steering wheel** of a car or the like, the hand wheel being adapted to attach onto the hand **grips** when the latter are in the aircraft **joystick** simulating position... ... The **control device**, which provides control signals to a computer simulating a vehicle being driven, includes a handle (10) which is **manually** rotatable about a first axis (11), the handle comprising a handlebar (16) extending outwards from the first axis on either side thereof. The handlebar includes an inner portion (17) and hand **grips** (18) on the ends thereof inner portion, the hand **grips** being slightly curved and obliquely **pivoted** to the respective inner portion of the handlebar in such a way that in a first disposition the hand **grip** is substantially aligned with the inner portion to simulate handlebars of a motor cycle, and in a second disposition the hand **grips** are in position simulating a **joystick** of an aircraft, wherein the inner portions represent spokes and the hand **grips** are generally parallel to one another. Conveniently, the **control device** also includes a hand wheel to simulate a **steering wheel** of a car or the like, the hand wheel being adapted to attach onto the hand **grips** when the latter are in the aircraft **joystick** simulating position.

...**Claims:**1. A **control device** for data processing apparatus, said device including a handlebar (16) comprising a first handlebar shaft (17) extending outwardly from one side of a column (10... ... second side of said column (10), said handlebar (16) being rotatably mounted to said column (10) for rotation about a first axis (15) such that **manual** rotation of said handlebar (16) about said axis (15) produces a first electrical control signal for transmission to said data processing apparatus, said column (10) being **manually** rotatable about a second axis (11) which is inclined to said first axis (15), and arranged such that rotation of said column (10) about said... ... second electrical control signal for transmission to the data processing apparatus, each of said handlebar shafts (17) having, at the respective end thereof, a hand **grip** portion (18), characterised in that the second axis (11) is displaced from the first axis (15) and further in that each handle **grip** portion (18) is obliquely **pivoted** to the respective handlebar shaft (17) in such a way that in a first disposition said hand **grip** (18) is substantially aligned with the respective handlebar shaft (17), and in a second disposition said hand **grip** (18) extends away from said second axis (11) in a direction substantially tangential to, or substantially circumferential with, an orbital trajectory around said first axis.

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49/5,K/146 (Item 146 from file: 350) [Links](#)

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0004149554

WPI Acc no: 1987-258878/198737

**Hand held remote for toy vehicle - has pendulum arm which tends to remain vertical when rest of controller turns and operates steering signal switch**

Patent Assignee: KENNEDY M (KENN-I)

Inventor: ARAD A; KENNEDY M; NAGEL D

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
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GB 2187650	A	19870916	GB 19872448	A	19870204	198737	B
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Priority Applications (no., kind, date): US 1986827799 A 19860207

The **remote controller** detects the orientation in space of the controller and provides a corresponding steering signal for the vehicle so that a user may turn and steer the vehicle in response to turning movement of the **hand-held** controller. Radio communications or a tether transmit control signals from the controller to the vehicle. The controller may resemble a **steering wheel**, handle bars, or ship or aircraft controls.

The orientation-detector comprises a pendulum arm (36) which tends to remain vertical when the rest of the controller turns and which operates a steering signal switch (34). A spring (50) urges the pendulum switch to its central neutral position. Turn signal lights are operated when the spring touches contacts (56,58). The controller includes a **forward/reverse** switch (74) and a horn.

ADVANTAGE - Controller is formed in shape of **steering wheel** or other controls of vehicle being controlled

**Hand held remote for toy vehicle... Alerting Abstract ...**The **remote controller** detects the orientation in space of the controller and provides a corresponding steering signal for the vehicle so that a user may turn and steer the vehicle in response to turning movement of the **hand-held** controller. Radio communications or a tether transmit control signals from the controller to the vehicle. The controller may resemble a **steering wheel**, handle bars, or ship or aircraft controls... ..urges the pendulum switch to its central neutral position. Turn signal lights are operated when the spring touches contacts (56,58). The controller includes a **forward/reverse** switch (74) and a horn ... ..ADVANTAGE - Controller is formed in shape of **steering wheel** or other controls of vehicle being controlled. **Title Terms .../Index Terms/Additional Words: TOY;. Claims:**The **remote controller** detects the orientation in space of the controller and provides a corresponding steering signal for the vehicle so that a user may turn and steer the vehicle in response to turning movement of the **hand-held** controller. Radio communications or a tether transmit control signals from the controller to the vehicle. The controller may resemble a **steering wheel**, handle bars, or ship or aircraft controls... ..urges the pendulum switch to its central neutral position. Turn signal lights are operated when the spring touches contacts (56,58). The controller includes a **forward/reverse** switch (74) and a horn.

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